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L8: Entry 2 of 14

File: USPT

Aug 6, 2002

DOCUMENT-IDENTIFIER: US 6430177 B1

TITLE: UNIVERSAL MESSAGING SYSTEM PROVIDING INTEGRATED VOICE, DATA AND FAX MESSAGING SERVICES TO PC/WEB-BASED CLIENTS, INCLUDING A CONTENT MANAGER FOR RECEIVING INFORMATION FROM CONTENT PROVIDERS AND FORMATTING THE SAME INTO MULTIMEDIA CONTAINERS FOR DISTRIBUTION TO WEB-BASED CLIENTS

Application Filing Date (1):

19980609

Brief Summary Text (4):

Universal Messaging enables subscribers to realize the benefits of unified messaging, which consolidates the notification, presentation and management of voice, fax and e-mail messages. With Universal Messaging, a subscriber need only check a single notification device for new messages. Such notification may be provided, e.g., by an e-mail message, message waiting indicator light, stutter dial tone, pager and/or an automatic outdial phone call.

Brief Summary Text (8):

A second aspect of the present invention concerns the need to provide support for new message types specifically targeted for the delivery of multimedia content. Such message types will preferably be ignored by normal e-mail clients but will be visible to clients specifically adapted to recognize them. The present invention provides a solution to this challenge by providing a novel approach to controlling access to different types of content in a messaging system. This aspect of the invention permits the use of existing Universal Messaging platform capabilities to address, store, transport, and deliver multimedia content packaged as attachments to uniquely identified e-mail messages.

Brief Summary Text (11):

Further background information concerning the construction and operation of messaging systems, and particularly one employing a Network Applications Platform (NAP) for interfacing a telephone network and network applications running on an enterprise server, may be found in: U.S. Pat. No. 5,133,004, Jul. 21, 1992, "Digital Computer Platform for Supporting Telephone Network Applications"; U.S. Pat. No. 5,138,710, Aug. 11, 1992, "Apparatus and Method for Providing Recoverability in Mass Storage Data Base Systems Without Audit Trail Mechanisms"; U.S. Pat. No. 5,384,829, Jan. 24, 1995, "Digital Computer Platform for Supporting Telephone Network Applications"; U.S. Pat. No. 5,323,450, Jun. 21, 1994, "Telephone Network Applications Platform for Supporting Facsimile Applications"; U.S. Pat. No. 5,494,606, Feb. 20, 1996, "Multi-Lingual Prompt Management System for a Network Applications Platform"; U.S. Pat. No. 5,633,916, May 27, 1997, "Universal Messaging Service Using Single Voice Grade Telephone Line Within a Client/Server Architecture"; U.S. patent application Ser. No. 08/944,924, filed Oct. 6, 1997, "Enhanced Multi-Lingual Prompt Management in a Voice Messaging System With Support for Speech Recognition"); U.S. patent application Ser. No. 08/964,744, filed Nov. 5, 1997, "Methods and Apparatus for Providing External Access to Executable Call Flows of a Network Application"; U.S. patent application Ser. No. 08/987,571, filed Dec. 11, 1997, "Multiple Language Electronic Mail Notification of Received Voice and/or Fax Messages"; and U.S. patent application Ser. No. 09/094,026, filed on

even date herewith, "System and Method for Integrating Notification Functions of Two Messaging Systems in a Universal Messaging Solution".

Brief Summary Text (16):

According to the present invention, each of the inventive multimedia containers comprises a message portion and an attachment portion having associated title, type and filename fields, each of which is used in a predefined manner. The message portion, for example, is preferably characterized by a message type field and a corresponding predefined set of message type definitions; a predefined use of the subject field; and a predefined structure for the text-note field. The text-note field is preferably used for communication between the content manager means and the client(s). Further, all content is preferably carried in the attachment portion via a pointer in the filename field. Preferably, only one type of content, either audio, text, HTML, or graphics, is used per attachment; and the filename field is used to contain pointers to objects, including a Uniform Resource Locator (URL). Finally, the text-note field of the message portion is preferably used to carry instructions relating to presentation and management of the content, and the actual content is referenced by pointers using attachment structures.

Brief Summary Text (17):

Accordingly, the present invention provides support for new message types specifically targeted for the delivery of multimedia content. Such message types may be ignored by normal e-mail clients but will be visible to custom clients specifically adapted to recognize them. Thus, the invention provides a novel approach to controlling access to different types of content in a messaging system while permitting the use of existing Universal Messaging platform capabilities to address, store, transport, and deliver multimedia content.

Drawing Description Text (6):

FIG. 5 illustrates how the different components of the inventive Universal Messaging system use standard interfaces and protocols to provide unified messaging services.

Detailed Description Text (5):

The Web platform 12 includes an applet server 12-1 (e.g., for providing Java applets to the Web-based client); a Content Manager Application 12-2 (i.e., an application designed to receive information from content providers, format information into multimedia containers and distribute these containers to the Universal Messaging system via CMC calls); and an NT based Internet server 12-3, such as, e.g., an IIS server. (IIS is Microsoft Windows NT's Internet Information Server. IIS permits one to set up a Web site and control and manage it remotely through the Internet.) Web platform 12 also includes or is operatively coupled to a first database (Offer Database) 12-4 and a second database (Subscription Database) 12-5, where "offer" refers to an e-mail based advertisement and "subscription" refers to "news" from a content provider. In addition, Web server 12 includes a communications object/address book 12-6 and a Sockets Interface 12-7.

Detailed Description Text (9):

Another aspect of the present invention concerns an inventive method and apparatus for controlling access to different types of content in a messaging system. The present invention permits the use of existing Universal Messaging platform capabilities to address, store, transport, and deliver multimedia content packaged as attachments to uniquely identified e-mail messages. These specialized multimedia "containers" can be operated on by custom messaging clients in the same way as normal e-mail, and custom clients can be created to manipulate and present the contents of the containers in any way desired. A "custom client" is a Web-based messaging client that is custom built to manage and display multimedia containers. A "multimedia container" is a specifically designed type of message to store various kinds of multimedia information. Such a container may be filled by the Content Manager Application 12-2 (FIG. 1), distributed by the messaging system and

displayed by a custom client. This aspect of the present invention is described below in connection with the discussion of the Content Manager 12-2.

Detailed Description Text (62):

SendMessage (FunctionID=5): Parameters are numerous and include such items as to, cc, bcc, subject, priority, message text, attachments, etc. An additional parameter determines whether or not the message is sent to the designated recipient(s) as well as being "saved" by sending the message to the originator with a specific BLT message type that allows foldering emulation. CMC functions called include, CMC_Send, Clear_Message, Set_Message, Set_Message_Recipient, Set_Message_Attach, and Get_Message. This function preferably involves the implementation of BCC recipients within the CMC layer 10-4.

Detailed Description Text (81):

As mentioned above, another aspect of the present invention concerns an inventive method and apparatus for controlling access to different types of content in a messaging system. The approach described herein permits the use of existing Universal Messaging platform capabilities to address, store, transport, and deliver multimedia content packaged as attachments to uniquely identified e-mail messages. These specialized multimedia "containers" can be operated on by custom messaging clients in the same way as normal e-mail. Save, delete, reply, forward, and other common e-mail functions continue to operate as expected. Customized clients can be created to manipulate and present the contents of the containers in any way desired. Some of the material referred to below can be found in the X.400 API Association's Common Messaging Call API Specification, Version 2.0, dated Jun. 28, 1995.

Detailed Description Text (87):

The Universal Messaging platform 10 also ensures that the current state of all messages (including content containers) is accurately reflected no matter which access device is used. For example, if an offer is opened and saved at the handset 26, the saved state of the offer is reflected in the users universal inbox. If the user then logs into the system using the Web interface, the custom Web application (e.g., browser 22) can use the inbox information to display the offer header on the screen in a manner different from new offers. Other message operations (such as delete) are reflected in the universal inbox. Prohibiting or enabling certain operations on a message type or user basis (such as the deletion of subscription containers) is a custom client function.

Detailed Description Text (95):

1. Develop a list of agreed upon message type definitions. The definitions should be sufficiently flexible to allow expansion in the future.

Detailed Description Text (101):

Message Types

Detailed Description Text (102):

As mentioned, the Universal Messaging platform may be enhanced to provide support for a new series of message types specifically targeted for the delivery of multimedia content. These message types will be ignored by normal e-mail clients but will be visible to the CMC layer 10-4 clients specifically coded to recognize the message type.

Detailed Description Text (103):

The following message types are defined in the CMC specification:

Detailed Description Text (104):

Because all message types other than CMC Registered Values are ignored by standard messaging clients, our choices are to use one of the defined object identifiers or to specify a new message type. The Universal Messaging platform has already

declared message type "BLT:NAP" to be used to identify messages (currently voice and fax) that are handled by the UVMS messaging application. ("NAP" refers to Network Applications Platform.) Because the content delivery function does not seem to fit into any of the pre-declared message type categories, we suggest that one define a new message type class for the content containers. The message type takes the format: BLT:UMSCONTENT.<class>.<subclass> . . . <subclass>.

Detailed Description Text (105):

The hierarchy of the new message class for type "SUBSCRIPTION" is shown below:

Detailed Description Text (106):

Similar message classes may be defined for type "OFFER" and "BILL". The class types are determined by the types of content to be offered. Subclasses are used to differentiate between different formats of content within a class. Appropriate subclass extensions can be defined within each class as required. In a presently preferred embodiment of the invention, extensions can be defined as required up to the message type data item limit of 255 characters.

Detailed Description Text (118):

Standard messaging clients (e.g., such as Microsoft Exchange and Lotus Notes cc:Mail) are only capable of acting on messages where the message type field is IPM:xxxx, where "xxxx" could be Note, NDN, Report, etc. The multimedia container concept disclosed herein relies on a messaging client that has the capability to recognize message types other than IPM. In the case of the Universal Messaging system, the message type used for multimedia containers is "BLT:UMSCONTENT.<content_type>" (where BLT stands for bilateral defined type). A custom messaging client for multimedia containers must have the capability to both create and interpret CMC messages of type BLT:UMSCONTENT.

Detailed Description Text (119):

A client of this type can be constructed by starting with a basic CMC client architecture (as used in the Universal Messaging e-mail client) and adding additional logic to handle the extended range of type fields required for the multimedia containers. In the case of message creation, this logic would include a table of supported content types indexed by a value known to the content provider. Content that is delivered to the custom client (through electronic data transfer or other means) will contain an identifying value that the custom client will use as an index into the content type table. Content messages are constructed by creating a standard CMC message (as for an e-mail), addressing the message to the recipient of the content, placing the content (or pointer to the content) into the body of the message, and setting the message type attribute equal to the string "BLT:UMSCONTENT<content type from the table>". The message is then submitted to the CMC API for normal handling in the manner of a standard e-mail.

Detailed Description Text (120):

The messaging platform delivers the multimedia content message to the addressed recipient. The message is ignored if the recipient does not have a custom multimedia container client. The standard client does not display the message or attempt to perform any action on it.

Detailed Description Text (121):

A custom client capable of recognizing and acting on the multimedia content message requires a change to the standard messaging client's message header handling logic that will cause the client to recognize message types beginning with BLT:UMSCONTENT. Upon discovering a message of type BLT:UMSCONTENT, the custom client proceeds to read the extended type information following the BLT:UMSCONTENT string. This information is used to provide customized presentation and handling of the content embedded in the message body. The custom client must should logic to handle all of the types of content that can be transported in the multimedia content container.

Detailed Description Text (161):

3. The Session Manager 10-5 validates the session, and, if valid, passes the request to the Voice Message Management Module (VMMM) component of VNMS.

Detailed Description Text (220):

The "open architecture" of the presently preferred embodiment is illustrated in FIG. 5. In particular, FIG. 5 illustrates how the different components of the inventive Universal Messaging system use standard interfaces and protocols to provide unified messaging services.

Detailed Description Paragraph Table (4):

Object Identifiers type "OID", used for types identified by object identifiers as defined in CCITT Recommendation X.208. CMC Registered Values type "CMC", used for types defined in the CMC 2.0 specification. "CMC:IPM.Note" Interpersonal message. A memo-like message containing a recipient list, an optional subject, an optional text note, and zero or more attachments. The "Message" structure is optimized to accommodate a message of type IPM. "CMC:Report.IPM.Note.IPRN" Receipt notification for an interpersonal message. A receipt notification indicates that a message has been read by the recipient. "CMC:Report.IPM.Note.IPNRN" Non-receipt notification for an interpersonal message. A non-receipt notification indicates that a message has been removed from the recipient's mailbox without being read.

"CMC:Report.IPM.Note.DR" Delivery report indicating that the service was able to deliver a message to the recipient. "CMC:Report.IPM.Note.NDR" Non-delivery report indicating that the service was not able to deliver a message to the recipient.

"CMC:Report.IPM.Note.CDR" Both delivery and non-delivery reports when the original message is destined for multiple recipients, indicating that the messaging service is able to deliver the message to some recipients but not to the others. Bilateral Defined Values Type "BLT", used for types that are unregistered.

Detailed Description Paragraph Table (6):

```
typedef struct { CMC_message_reference *message_reference; CMC_string message_type;
CMC_string subject; CMC_time time_sent; CMC_string text_note; CMC_recipient
*recipients; CMC_attachment *attachments; CMC_flags message_flags; CMC_extension
*message_extensions; } CMC_message;
```

Detailed Description Paragraph Table (7):

message_reference Identifies the message. The message reference is unique within a mailbox. message_type String that identifies the type of the message. subject Message's subject string. This is a free form string which can be used as desired by the content management application. time sent Date/time message was sent (submitted). message_reference Identifies the message. The message reference is unique within a mailbox. text_note Message's text note string. If the value is NULL, there is no text note. If the CMC_TEXT_NOTE_AS_FILE flag is set, the text note is in the first attachment. The format of the text note, regardless of whether it is passed in memory or in a file, is a sequence of paragraphs, with the appropriate line terminator for the platform (CR for Macintosh, LF for Unix, CR/LF for DOS and Windows, etc.) terminating each paragraph. Long lines (paragraphs) may be word wrapped by the CMC implementation. Note that there is no guaranteed fidelity (e.g., a long paragraph may be returned by the CMC read functions as a series of shorter paragraphs). recipients Pointer to first element in array of recipients of the message. attachments Pointer to first element in array of attachments for the message. message_flags Bits for Boolean attributes. Unused bits should be clear. message_extensions Pointer to first element in array of per-message extensions.

CLAIMS:

1. A Universal Messaging system, comprising: (a) a messaging platform; and (b) a content manager application, operatively coupled to said messaging platform, for

receiving information from a content provider and formatting said information into multimedia containers to be distributed to remote clients via a wide area communications network operatively coupled to said messaging platform, wherein said multimedia containers are characterized by a message portion and an attachment portion, said attachment portion comprising a plurality of fields each of which is used in a predefined manner.

5. A Universal Messaging system as recited in claim 4, wherein said message portion is characterized by a message type field and a corresponding predefined set of message type definitions; a predefined use of a subject field; and a predefined structure for a text-note field.

11. A Universal Messaging system, comprising: (a) a messaging platform supporting an e-mail messaging system and a voice/fax messaging system; and (b) content manager means, operatively coupled to said messaging platform, for receiving information from a content provider and formatting said information into multimedia containers to be distributed to remote clients via a wide area communications network operatively coupled to said content manager means; wherein said content manager means provides multimedia containers for delivering multimedia content to clients, wherein each of said containers comprises a message portion and an attachment portion having associated title, type and filename fields; wherein said message portion is characterized by a message type field and a corresponding predefined set of message type definitions, a predefined use of a subject field, and a predefined structure for a text-note field; wherein said text-note field is used for communication between the content manager means and the clients; wherein all content is carried in the attachment portion via a pointer in the filename field; wherein only one type of content is used per attachment; wherein the filename field is used to contain pointers to objects; and wherein the text-note field of the message portion is used to carry instructions relating to presentation and management of the content, and the actual content is referenced by pointers using attachment structures.

13. In a Universal Messaging system, a method for delivering multimedia information to remote clients, comprising the steps of: receiving information from a content provider; formatting said information into multimedia containers; and distributing said multimedia containers to the remote clients via a wide area network operatively coupled to said Universal Messaging system; wherein each of said multimedia containers comprises a message portion and an attachment portion having associated title, type and filename fields, each of which is used in a predefined manner.

14. A method as recited in claim 13, wherein said message portion is characterized by a message type field and a corresponding predefined set of message type definitions; a predefined use of a subject field; and a predefined structure for a text-note field.

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L9: Entry 1 of 15

File: PGPB

Dec 13, 2001

DOCUMENT-IDENTIFIER: US 20010050978 A1
TITLE: GENERIC DISTRIBUTED MESSAGE BOX

Abstract Paragraph:

A system and method are disclosed, which include an arrangement of message boxes that can be readily accessed by users from different communication networks. The storage of messages addressed to a user can reside on nodes at various locations. The location of the messages at each instant is controlled by a service computer or "Personal Assistant". As such, the storage and retrieval of such a message can be described as a type of "meeting," whereby simultaneous connectivity between the attending message sender and intended recipient is not required.

Application Filing Date:
19980624

Summary of Invention Paragraph:

[0004] A personal message box (e.g., for storing voice mail messages, facsimile messages, e-mail or other text messages, multimedia, etc.) is presently a common and valued service offered by communication network operators as a complement to ordinary voice services and other real-time services. As such, the format of a stored message can vary and comprise, for example, textual, verbal or visual information. Accordingly, many mobile phone users appreciate an opportunity to be able to convert a message to a different format than what was originally stored.

Summary of Invention Paragraph:

[0008] PCT Application No. WO-9620553, titled "Unified Messaging and Long Distance Communication System," discloses a method for integrating a public network and a data network in order to transfer messages from a sender to a receiver's mailbox. The receiver can then be notified about a new message. Also, a method is disclosed for converting the format of a message, in order to reroute it to a selected terminal.

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L9: Entry 2 of 15

File: USPT

Mar 23, 2004

DOCUMENT-IDENTIFIER: US 6711154 B1

TITLE: Apparatus and method for device independent messaging notification

Abstract Text (1):

An apparatus and method for alerting a user upon receipt of selected messages, independent of the type of device generating the message is provided. Message generating devices include telephony devices (telephone, fax machine, etc.), or data devices such as a computer or PDA. All messages are converted into a format compatible with a data network for delivery to a web server. The web server includes a message notification system with message alert type selection and incoming message filtering. A user designates, either from a computer, or from a telephone, the types of messages for which s/he wishes to be alerted, and designates one or more device types (email address, fax machine, pager number, or telephone number) to receive the alert. When messages are received by the web server, they are distinguished by message type, and filtered according to the user defined criteria. Selected messages cause a message alert to be generated to the user configured devices.

Application Filing Date (1):

19990129

Parent Case Text (2):

This application is related to the following U.S. Patents and co-pending U.S. Patent Applications which are hereby incorporated by reference: application Ser. No. 09/239,560, filed Jan. 29, 1999, entitled "INTEGRATED MESSAGE STORAGE AND RETRIEVAL SYSTEM DISTRIBUTED OVER A LARGE GEOGRAPHICAL AREA"; application Ser. No. 09/240,367, filed Jan. 29, 1999 now U.S. Pat. No. 6,411,685, entitled "A SYSTEM AND METHOD FOR PROVIDING UNIFIED MESSAGING TO A USER WITH A THIN WEB BROWSER"; U.S. Pat. No. 6,263,064, issued Jul. 17, 2001, entitled "CENTRALIZED COMMUNICATION CONTROL CENTER FOR VISUALLY AND AUDIBLY UPDATING COMMUNICATION OPTIONS ASSOCIATED WITH COMMUNICATION SERVICES OF A UNIFIED MESSAGING SYSTEM AND METHODS THEREFOR"; application Ser. No. 09/239,584, filed Jan. 29, 1999, entitled "COMPUTER-IMPLEMENTED CALL-FORWARDING OPTIONS AND METHODS THEREFOR IN A UNIFIED MESSAGING SYSTEM"; application Ser. No. 09/240,893, filed Jan. 29, 1999, entitled "INTERACTIVE BILLING SYSTEM UTILIZING A THIN WEB CLIENT INTERFACE"; application Ser. No. 09/240,368, filed Jan. 29, 1999, entitled "A SYSTEM AND METHOD TO MANAGE PHONE SOURCED MESSAGES"; application Ser. No. 09/240,434, filed Jan. 29, 1999, entitled "METHOD AND APPARATUS FOR NETWORK INDEPENDENT INITIATION OF TELEPHONY"; application Ser. No. 09/240,435, filed Jan. 29, 1999, entitled "APPARATUS AND METHOD FOR DEVICE INDEPENDENT MESSAGING NOTIFICATION"; application Ser. No. 09/240,436, filed Jan. 29, 1999, entitled "APPARATUS AND METHOD FOR CHANNEL-TRANSPARENT MULTIMEDIA BROADCAST MESSAGING"; and application Ser. No. 09/239,589, filed Jan. 29, 1999, entitled "VOICE ACCESS THROUGH A DATA-CENTRIC NETWORK TO AN INTEGRATED MESSAGE STORAGE AND RETRIEVAL SYSTEM".

Brief Summary Text (4):

This invention relates in general to the fields of telephonic and data communication, and more specifically to a notification system for alerting a user of received messages, regardless of what type of device generated the message.

Brief Summary Text (9):

In contrast to this scenario, modern data communications between computers is typically provided via data networks, rather than telephone networks, for which cost is associated more closely with the speed at which connection is made, and the amount of data that is being transferred. That is, end to end connection between computers is provided over a relatively cost free data network, commonly referred to as the Internet. However, the types of connections available over the Internet are typically associated with computer data types such as email, web pages, etc. Although some development has been made to encode voice information for transfer over the Internet, unified messaging (voice, email, fax) over a data network is still unavailable. In addition, even where voice, email and fax messaging is available, there is a strict correlation between end point communication devices that must be maintained. That is, a telephone must communicate with another telephone, a fax machine with another fax machine, and an email client with another email client. So, a voice capable computer is unable to communicate with a remote telephone, because the two devices are communicating over separate networks (telephone and data).

Brief Summary Text (11):

Furthermore, as multiple device types are coupled together over a data network, it is possible that a user will wish to access all of his/her messages, regardless of message type, via a unified system, from either a computer or telephone. Since multiple message types (email, voicemail, fax) will all be received within a unified messaging system, what is needed is the ability to alert a user of a message received, without regard to the type of end device generating the message. That is, the user should have the capability of configuring his/her communication system to alert him/her upon receipt of messages, whether fax, voice or email, in any desired form, such as fax, voice, email, pager, etc.

Brief Summary Text (13):

To address the above-detailed deficiencies, the present invention provides a web based message alert system that includes a local point of presence (POP) server coupled to a plurality of message sending devices, and a device independent message notification system coupled to the POP server. The message notification system includes message alert type selection, and incoming message filtering, configurable by a user. The system also includes a plurality of receiving devices, coupled to the message notification system, for receiving a message alert according to the message alert type selection.

Brief Summary Text (15):

In another aspect, the present invention provides a method for alerting a user upon receipt of selected ones of a plurality of messages, the plurality of messages being generated from a plurality of telecommunication devices, the method alerting the user via the plurality of telecommunication devices according to user selectable criteria. The method includes receiving the plurality of messages via a data network; distinguishing between the plurality of received messages according to message type; selecting the ones of the plurality of messages according to the message type; and alerting the user upon receipt of the selected ones of the plurality of messages using any of the plurality of telecommunication devices.

Detailed Description Text (8):

Also, while not shown in FIG. 1, it should be appreciated by one skilled in the art that calls from devices 102, 104 to other similar devices are not established unless the similar end devices are answered. Of more recent development are answering systems (not shown) connected to the telephone network to store particular message types, either voice or fax. In contrast, communication via email over data networks provides for message storing and retrieval without requiring two computers 120, 128 to be simultaneously connected to each other. Thus, data networks provide for asynchronous communication between computers, while telephony

devices require some sort of answering device, or messaging service that is device specific.

Detailed Description Text (9):

Referring now to FIG. 2, a block diagram 200 is shown illustrating the present invention which provides for communication between endpoints 202 and 204 that is essentially independent of either data type, or network type. Each end point 202, 204, say New York and Paris, may communicate with each other in any of a number of data types, such as voice, facsimile, email, or other analog or digital form, using end devices such as a telephone (analog or cell phone), fax machine, computer, personal digital assistant (PDA), or other device, via a ThinkLink interface 206. In addition, the device type at one endpoint 202 need not correspond to the device type at another endpoint 204. That is, the ThinkLink interface 206 allows bidirectional communication to be established between say a telephone and a computer. In addition, the ThinkLink interface 206 dynamically converts information into an appropriate format depending on how the user requests the information, regardless of the original format of the information. For example, if the information at one end of a connection is transmitted via email, and the user requests the email via a telephone, the email is dynamically converted to voice. Or, a user may wish to have faxes delivered via email, rather than to a physical fax machine. The ThinkLink interface 206 therefore not only connects all device types to a data network for delivery, but also provides conversion of differing data types, as specified by a user. This will be more particularly illustrated below with reference to FIG. 4. Furthermore, if an endpoint device does not answer, a messaging system within ThinkLink will store the message, regardless of message type, for later retrieval by a user. The ThinkLink interface 206 is more particularly illustrated in FIG. 3, to which attention is now directed.

Detailed Description Text (31):

When a user logs onto the web server 512, the server 512 queries the database and returns to the user an HTML page that indicates the type (voicemail, fax, email) and number of unviewed messages the user has in the system. If the user wishes to examine new messages, s/he simply clicks on the corresponding hyperlink text, and is taken to a message area applicable to the message type. Alternatively, if a user calls in to their local POP, the POP queries the web server 512 and returns a series of menu prompts that indicate the type (voicemail, fax, email) and the number of unviewed messages the user has in the system. In FIG. 6, Jim is shown to have 2 new email messages, 1 new voice message, and 0 faxes.

Detailed Description Text (36):

In addition, a message alert button 703 is provided to allow a user to selectively turn on/off a message alert feature of ThinkLink. More specifically, a user can turn on message alert via button 703. The user is then provided with drop down boxes 704, 706, 708 to configure when and how s/he is to be alerted. For example, drop down box 704 allows the user to select the types of messages for which s/he wishes to be alerted. These include all message types, faxes only, email only, voicemail only, or a select combination between these. One skilled in the art should appreciate that as new message types are developed, they can be included within the alert engine of the present invention. For example, if a user wished to be alerted any time s/he received a fax, s/he would select the fax option on drop down box 704.

Detailed Description Text (37):

Once message alert 703 is turned on, and a message type 704 is selected, the user can configure how s/he wishes to be alerted via drop down box 706. Drop down box 706 illustrates four alternative message alert types: fax, email, voice, and pager, or any combination of these. For example, a user may wish to be paged upon receipt of any fax. The user would select fax in box 704, and pager in box 706. Then, upon receipt of any fax, message notification 514 would cause the user's pager to be called.

Detailed Description Text (38):

Furthermore, in addition to selectively enabling alert messages to be generated based on message type, filters may be used to further qualify or distinguish between received messages. Filter selection is made via drop down box 708. When filtering is turned on, a user is given the opportunity to enter filtering, based on message type, via box 710.

Detailed Description Text (40):

Referring now to FIG. 9, a screen shot 900 is shown of the filtering options accessed via the selection box 710. The screen 900 is shown for email and voice mail message types, but a similar box may be provided for fax messages. Within the screen 900 are user definable criteria 902 for distinguishing between messages. For example, if the message type is voicemail (or fax), a user could specify a filter to select only those messages originating in area code 512. If such a designation is made, and filtering is turned on (via box 708), using the examples above with Reference to FIG. 7, a user would be alerted via his pager when a fax is received that originated from area code 512. Of course, other criteria is available for filtering such as who the message is being sent to, whether a message subject is available (for voice or email, for example), and whether the body of the message contains particular text (for email or fax, for example).

Detailed Description Text (42):

The above description of FIGS. 6-10 provide one embodiment for entering message alert options into ThinkLink. One skilled in the art will appreciate that it is not the interface that is important. Rather, it is that message alerts may be generated for one or more receiving devices, upon receipt of any message, voice, fax or email, based either on message type, or on further criteria established via filters applied to received messages. The methodology incorporated into the message notification 512 is particularly illustrated in FIG. 11, to which attention is now directed.

Detailed Description Text (45):

At blocks 1106-1110, filters applicable to the message types are applied. Flow then proceeds to decision block 1112.

Detailed Description Text (48):

Referring to FIG. 12, a block diagram 1200 is shown, similar to that described above with reference to FIG. 5. The diagram 1200 includes a number of different calling devices 1202 connected to a local data server 1204 in New York, and a data server 1214 in Paris, for example. When a call is made from any of the devices 1202 (fax, phone or email), and the message notification 1210 receives the message, the message notification determines whether an alert is to be provided, and if so, to what messages. If an alert is to be provided the message notification determines how the alert is to be provided (email, fax, pager, for example), and delivers the alert to the appropriate data server 1214. The receiving device specified by the user receives the alert to notify the user that a particular message, based on message type, or other criteria, has been received. The user can then connect to the ThinkLink web server 1208, either from a computer or telephone, and can retrieve the message.

Detailed Description Text (49):

Although the present invention and its objects, features, and advantages have been described in detail, other embodiments are encompassed by the invention. For example, the discussion above with reference to FIGS. 6-12 illustrate message origination from telephones, faxes, or computers, and alert a user, based on message type and filtering, via pager, telephone, fax or email. Other communication options are possible for either incoming messages, or alerts. What is particularly novel is that a unified messaging system, with alert features is provided over a data network, without regard to the type of device generating the message, or the

type of device with which the user desires to receive the alert.

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L9: Entry 7 of 15

File: USPT

Aug 14, 2001

DOCUMENT-IDENTIFIER: US 6275570 B1

TITLE: System and method of provisioning subscribers in a messaging environment comprising two messaging systems

Application Filing Date (1):
19980422

Brief Summary Text (6):

Universal messaging describes a level of messaging integration that gives users access to all available message types from the device of choice. There are two design approaches--unified and integrated--that fulfill the same goal. Unified messaging manages and stores all message types in one repository; integrated messaging uses messaging protocols for communication and coordination between separate message stores. Microsoft's Messaging Application Programming Interface (MAPI) is prevalent in the unified architecture, while the integrated architectures typically use a Common Messaging Call (CMC) API.

Brief Summary Text (11):

The present invention is directed to a system for provisioning subscribers in a message environment, comprising: a first messaging system providing information services to the subscribers including first subscriber information storage means and first message storage means for storing a first plurality of messages; a second messaging system providing information services to the subscribers including second subscriber information storage means and second message storage means for storing a second plurality of messages, the first and second messaging systems being different types of systems; provisioner means for receiving subscriber information at the first messaging system; and message handling system provisioning service provider (MPS) means coupled to the first and second messaging systems for transferring the subscriber information to the second messaging system from the provisioner means. Preferably, the first messaging system comprises at least one of a voice-mail and a fax service, and the second messaging system comprises an e-mail service, and the MPS means has a single entry point.

Other Reference Publication (4):

Company Press Release, "Optus, Lucent Technologies Team Up to Bring Unified Fax and Voice Messaging to Microsoft Exchange Server", PRNewswire, Source: Optus Software, Inc., Mar. 3, 1998, 2 pages.

Other Reference Publication (6):

Fuertsch, P., "Universal Messaging: Taming the Multimedia Frontier", Unisphere, May 1997, 3 pages.

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L9: Entry 9 of 15

File: USPT

May 15, 2001

DOCUMENT-IDENTIFIER: US 6233318 B1

TITLE: System for accessing multimedia mailboxes and messages over the internet and via telephone

Abstract Text (1):

A unified messaging system that provides a multimedia mailbox. The system allows a subscriber to access stored multimedia messages, such as voicemail messages, facsimile messages, combined voice and facsimile messages and video messages, not only through a public switched telephone network using a telephone but also over a data network, such as the Internet or an intranet, using a personal computer. The system provides voicemail access over the telephone network, indicating message number, etc. with the ability to play messages to the telephone user as desired. For text type messages, such as facsimile and e-mail, the system converts the text into speech and plays the speech to the telephone user. The system allows a personal computer user to obtain the data network access using an Internet browser. The browser is used to access a home page of the system and get information about the messages stored, and is used to download (get) and play the messages at the personal computer via data streaming in the case of a voice or video messages or view the messages in the case of text type messages, such as facsimile and e-mail. The user can also perform the other typical messaging functions over the data network connection that are provided for telephone access, such as viewing a message list, saving and deleting messages, group list administration and other administration tasks.

Application Filing Date (1):

19961105

Brief Summary Text (8):

Several different types of messaging systems, such as voice mail and e-mail, are also available to users. Users of the variety of today's messaging systems typically have to use several different systems and/or terminals to get their messages. A typical business user may have several voice mailboxes, several e-mail mailboxes, and perhaps some mailbox-like facsimile services. Each of these mailboxes requires separate operations and different types of terminals (DTMF telephone for voice mail, personal computer (PC) for e-mail access, facsimile machine/PC for facsimile messages). The mailboxes have different names (addresses) and cannot usually interwork. Notification mechanisms are either non-existent, or tied to one of the mailboxes. What is needed is a mailbox system that integrates all of these message types and access methods.

Brief Summary Text (12):

It is an object of the present invention to provide a system that will allow multimedia messaging via a multimedia mail box.

Brief Summary Text (15):

It is also an object of the present invention to provide a platform that allows services for a variety of message types such as voice mail, video mail and facsimile mail, as well as other network services such as Internet and intranet services.

Detailed Description Text (2):

The present invention provides an integrated multimedia mailbox and unified messaging. The term "mailbox" is used to mean an entity visible to the subscriber. This is the entity the subscriber logs into and appears to operate on when the subscriber performs mail-related operations. This subscriber-visible entity may not correspond directly with a single implementation entity, but may exist only through the cooperation of several distinct messaging systems, each with its own message storage capability. To avoid confusion, the term "mailbox" is used to mean only the subscriber visible entity, and, where necessary, the term "message endpoint" is used to denote the implementation entity or entities which underlie the integrated mailbox.

Detailed Description Text (5):

b. A single inventory (message list), listing all messages of all data types, with the ability to control presentation of the inventory (e.g., sort the inventory according to message type, priority, or time of deposit, regardless of the type of message), with conceptually similar user interface actions for equivalent operations on any message type, and with the ability to randomly select messages for retrieval.

Detailed Description Text (10):

Note that there are degrees of integration in today's single-media mailboxes, both with respect of allowed message types and the access terminal types which can be used. For instance, integrated facsimile/voice mailboxes are common today, and e-mail can be used to transfer non-text information. Similarly, e-mail mailboxes cannot be accessed using telephones, and voice/facsimile mailboxes cannot be accessed using a PC.

Detailed Description Text (11):

Although it is possible to have a mailbox which is integrated with respect to multiple message types but which can only be accessed through a single type of terminal (e.g., e-mail systems using MIME), a fully integrated mailbox is preferably accessible from several types of terminals and pathways, to maximize the subscriber's ability to access his messages in various circumstances. The following terminal types are provided by the present invention: a. Conventional DTMF telephone handset; and b. Personal Computer (PC).

Detailed Description Text (14):

The integrated messaging system (IMS) of the present invention is preferably interfaced to external systems. This allows the subscriber to exchange messages with external subscribers and can be used to integrate several existing messaging accounts on different systems so that the user accesses a single (virtual) integrated mailbox. The following types of external systems can be included:

Detailed Description Text (20):

The integration of the mailbox can be real or virtual. "Real" mailbox integration means that the messages of all types are located in a single messaging system (MS), and that subscriber and administrative control facilities for messages and mailbox configuration parameters are provided at a single user interface point and do not involve cooperation or interaction with any other MS. "Virtual" integrated mailboxes provide the same subscriber-visible functionality, and appear the same to the subscriber as a real integrated mailbox. However, in the virtual integrated mailbox, the subscriber's messages are stored in at least two different MSs, whose configuration can be (but need not be) performed separately. The different messaging systems cooperate to provide the complete functionality. The term "associated MS" is used to denote an MS that is in a special relationship with another MS for the purposes of synthesizing a virtual IMS, and the term "external MS" is used to denote an MS which is not so closely associated, but which still has an interface to the IMS.

Detailed Description Text (28):

Pass-through integration is another approach where the front-end director 80 functionality is tightly incorporated into one of the MSs, such as VMS 68. The MS deals with the messages of its native type, but acts as a real-time proxy for subscriber requests for other message types. As discussed previously, the need for both voice and facsimile as well as PC access, the difficulty of interfacing in real-time to an external VMS, the difficulty of augmenting an EMS to handle voice, and the need for VMS-like notification mechanisms results in a preference that the director be added to a VMS 68 rather than to an EMS 66 as illustrated in FIG. 3.

Detailed Description Text (29):

The foregoing discussion indicates that the preferable approaches to an integrated multimedia mailbox with both DTMF and PC access are either a full, real IM system, or enhancement of a VMS so that it can provide pass-through real-time access to other messaging systems. As a result, there are two preferred system-level architectures: a. An enhanced VMS (i.e., the IMS) which provides all message storage and all user interfaces for all types of message. All other MSs interface to the IMS as external, non-integrated systems. b. An IMS which provides permanent storage for voice, video, text, e-mail and facsimile messages and exchanges other message types on demand with one or more closely associated systems such as an associated EMS (in addition to any interfaces to other external MSs). The IMS has all user interfaces and passes through user commands related to the associated EMS (s). The IMS exchanges deposit notifications with the associated EMS(s).

Detailed Description Text (33):

All messages have certain information (the message envelope) that goes along with them, such as sender, date/time of deposit, length, etc. The information varies with message type and, to some degree, with the means by which the message was received. The envelope information is preferably stored with the message, carried along with the message if it is to be delivered to an external system, and be presented to the subscriber. The IMS 106, as previously discussed, is able to present a single list or inventory, containing all messages of all types (sorted into types), to the subscriber when he logs into his mailbox, and provide the ability to select messages for retrieval. In addition, some of the message envelope information can be presented in the inventory. The amount of information presented in the inventory, and the format of presentation are determined largely by the human aspects of the access terminal; when the voice interface is used, the presentation is preferably limited to simple spoken message counts ("You have three new voice messages, one new facsimile message, and two new E-mail messages and one new video message. One voice message is urgent."), otherwise the subscriber may quickly get confused. For the same reason, complex inventory sorting, message selection or folder capabilities are preferably not provided through the voice interface, even though they can be if desired. However, a PC interface preferably shows much more information to the user without overloading the subscriber, and allows sophisticated operations such as organizing messages into folders.

Detailed Description Text (35):

The voice interface of the present invention presents a spoken message inventory which gives counts of messages per type, and additional salient information such as whether any are urgent. There are essentially two folders: new and saved messages, plus a virtual "wastebasket" which may be emptied (or not) at the end of the session. Selection of a message to play is predetermined by the system (play only voice and text-to-speech type messages), with some limited administrator controls (e.g., play new or saved messages first); and the user cannot choose to select a specific message, other than by skipping forwards or backwards through the messages.

Detailed Description Text (36):

A PC interface according to the present invention provides an inventory much like

the message list of e-mail systems. Typically, it includes, for each message: type of message (voice, video, e-mail, facsimile), subject (if any), sender, time of deposit, size of message (bytes, pages, seconds, as appropriate), and status (new/read, urgent, replied to, forwarded, etc.).

Detailed Description Text (38):

Message headers preferably include important details from the message envelope for non-voice/facsimile messages. The envelope of messages received via e-mail can have a lot more detail than those of voice/facsimile messages, and are also in text format. These type envelope elements are parsed by the system 106, and spoken in the same way that sender mailbox number, date/time, urgency and other envelope elements are handled (i.e., by concatenating pre-recorded prompt fragments). Preferably, the envelope data is stored in the same way, regardless of message type, to output the non-voice/facsimile envelope in spoken format.

Detailed Description Text (61):

Two situations for data type conversion can arise: when a subscriber's terminal type will not accept the stored message format, and upon user request. An intermediate situation is when a subscriber requests delivery or forwarding of the message to a system or terminal, other than the one he is using, which does not support the data type. Most conversions are implicit from the message type and the destination, but it may be preferable for a subscriber to explicitly request conversion (e.g.) of a facsimile message to text for forwarding to an Internet address, even though the message could have been sent as a MIME facsimile message.

Detailed Description Text (65):

Most of the above do not actually deliver messages, and so require no message data type conversions. Special delivery, however, is more complicated. The destination terminal must be capable of receiving the data type, or the system must be capable of recognizing the terminal type and converting the message accordingly. The data conversions discussed (e.g., text-to-facsimile or text-to-speech) should, however, handle most notifications. Special delivery via outdial to a PC is also provided.

Detailed Description Text (66):

In addition to data conversion for special delivery, it is necessary to consider how other message types affect the notification algorithms. One approach is to handle them in exactly the same way, so that any e-mail message causes the MWI light of the subscribers telephone to come on, or causes a page to a pager if it is marked urgent.

Detailed Description Text (71):

For both real and virtual IMSs, there is a need to interface with external systems 116-120 using the regular store-and-forward e-mail paradigm, in order to make the IMS subscribers part of a single world-wide messaging community. For the virtual IMS, special consideration must be given to the "associated MSs", since that non-standard (for e-mail systems) but conventional techniques need to be applied.

Detailed Description Text (79):

To submit a message, the VMS 68 needs to determine whether the message is to be sent to the EMS 66 or handled by the VMS 68. If the former, then the DMN II system previously mentioned (using the X.400 protocol) is used to forward the message to the EMS 66. The criteria for the decision would typically include the recipient address and the message data type. There are many possibilities for the algorithm; the preferred is:

Detailed Description Text (96):

The "real" IMS system 130 (106) of the present invention is preferably implemented using a distributed architecture such as illustrated in FIG. 6. The system 130 includes a message platform 132 that is connected to both the public switched telephone network 134 (via a digital matrix switch 135) and the Internet 136. A

subscriber can access the platform 132 using a telephone 138 to perform message access functions such as retrieving and listening to voice mail messages, forwarding messages, recording messages, and converting and playing facsimile messages. A detailed description of this type of access can be found in the U.S. patents previously described and is available in the CO Access.RTM. and Access NPTM systems from Boston Technology, Inc. The subscriber can also access the platform 132 for accessing voice mail messages and other types of messages such as facsimile and video messages over the Internet 136 through a conventional Internet service provider system (ISP) 140 using a personal computer 142.

Other Reference Publication (7):

"Unified Messaging System--Market foreces driving the development of unified messaging", Boston Technology, Jul. 1996.

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L9: Entry 13 of 15

File: USPT

Sep 14, 1999

DOCUMENT-IDENTIFIER: US 5951638 A

TITLE: Integrated multimedia messaging system

Abstract Text (1):

An integrated messaging system uses existing messaging equipment to receive, store, retrieve and manage messages in media types and formats appropriate to each existing system using protocols which are specific to that system. Two or more systems are tightly coupled in that a message received in one system can be accessed from all systems. Coordination between messaging systems is achieved by a synchronizer system which periodically connects to each system by means of a standard interface and insures that messages created or received in one system are distributed or identified in all other messaging systems. Thus, the messaging systems can operate together even though they have different user interfaces, storage designs and formats and access and routing protocols. In one embodiment, a message received in one system is copied to the other system. In another embodiment, the header information in a message is preserved in a message created in the other system, but the message is not copied. The header information allows the message to be located and reproduced. In still another embodiment, one messaging system is designated as the single store for all messages.

Application Filing Date (1):

19970321

Brief Summary Text (2):

This invention relates to multimedia messaging systems, in general, and, more specifically, to coordination and interconnection of messaging systems which process information in different formats, protocols or media types.

Brief Summary Text (6):

However, the heterogeneous formats and protocols of various message types used in different communication channels as well as the different systems required for receiving/managing the various messages can also lead to serious challenges for message recipients--challenges that can lower productivity and make communication a headache rather than a help.

Brief Summary Text (10):

One solution presently used for managing the various voice mail and e-mail message formats is typically called "unified messaging". Unified messaging systems differ in how tightly, or loosely, they join e-mail and voice-mail capabilities. For example, one unified messaging approach uses a single graphical user interface display to access both a voice mailbox and a separate e-mail mailbox. While such a system does allow the user to operate both the voice mail system and the e-mail system from a single location, this loosely coupled solution does not support access when the user is away from the location. Another problem with this type of system is that it does not provide a coordinated method of presenting, creating, managing, and filing messages, so it does little to combat the clutter of incoming information.

Brief Summary Text (11):

Another unified messaging technique consolidates both voice-mail and e-mail into one mailbox, an approach that generally requires an extensive investment in new equipment. For example, such a system might require adding voice messaging capabilities to e-mail server hardware. In addition to the high cost of new equipment, this approach frequently requires network redesign, produces a significant increase in administrative burden, and mandates user retraining. Basically, this amount of change results in a loss of existing investments in messaging equipment.

Brief Summary Text (14):

An integrated messaging system uses existing messaging systems to receive, store, retrieve and manage messages in media types and formats appropriate to each existing system using protocols which are specific to that system. Two or more systems are tightly coupled in that a message received in one system can be accessed from all other systems. Coordination between messaging systems is achieved by a synchronizer system which periodically connects to each system by means of a standard interface and insures that messages created or received in one system are distributed or identified in all other messaging systems. Thus, the messaging systems can operate together even though they have different user interfaces, storage designs and formats and access and routing protocols.

Brief Summary Text (17):

In accordance with yet another embodiment, one messaging system is designated as the single store for all messages regardless of the format in which the messages are received. For example, if the aforementioned e-mail system is configured to be the single store for a user's messages, when a voice message is received in the voice-mail system, the inventive integrated messaging system will create an e-mail message in the e-mail system with a digitized audio file attachment containing the voice message. The inventive system will then delete the original voice message in the voice-mail system.

Detailed Description Text (2):

FIG. 1 illustrates, in very general form, one embodiment of the invention utilizing two servers connected to a network. Multimedia messaging systems are resident on each server. These messaging systems could include one or more e-mail systems, one or more voice-mail systems, facsimile management systems, pager systems or the like. The messaging system are "heterogeneous" in that each system stores messages in a format and according to a protocol which is appropriate to the messages which it receives and manages. Even two messaging systems which receive and store messages with the same media types and formats may store messages in different formats and may handle the messages according to different protocols because the systems were manufactured by different vendors. For the purposes of illustration, it will be assumed in the following discussion that server 102 is an e-mail server and that server 104 is a voice-mail server. Other types of servers could be used without departing from the spirit and scope of the invention.

Detailed Description Text (3):

An e-mail system resident on an e-mail server 102 which receives e-mail messages in in various media types, for example text, digitizes the text messages and stores the digitized text messages in a storage associated with the server. The second system is a voice-mail system resident on a voice-mail server 104. This server receives voice-mail messages in an audio form, digitizes the audio message and stores the digitized audio in a storage associated with the server.

Detailed Description Text (6):

For the purposes of illustration the e-mail messaging system running on e-mail server 102 may be a NOTES.RTM. server which runs a NOTES.RTM. integrated database and e-mail messaging system developed and distributed by the Lotus Development Corporation located at 55 Cambridge Parkway, Cambridge, Mass. 02142. Similarly, for the purposes of illustration, the voice-mail system running on voice-mail server

104 may be an INTUITY AUDIX.RTM. Multimedia Messaging System (MACH 4) system developed and distributed by Lucent Technologies, Inc., located at Basking Ridge, N.J.

Detailed Description Text (10):

The integrated messaging system includes an audio player application program which runs in a user's computer and allows the user to play digitized audio file attachments in e-mail documents on the user's multimedia PC or on the telephone. The audio player, optionally in conjunction with a request agent program, can also access the voice-mail system to retrieve and play files stored thereon in the case where copies of the files are not available on the e-mail system. The audio player application displays controls, such as pause, rewind, and seek on the PC monitor which can all be used to control playback. The same controls can also be used when messages are played over the telephone.

CLAIMS:

7. An integrated multimedia messaging system for use on a digital network, the system comprising:

a first message server comprising a storage and connected to the network for receiving messages in a first format and for digitizing first format messages and storing the digitized first format messages in the storage along with state information indicating whether the first format messages have been read and identification information uniquely identifying each first format message;

a second message server comprising a storage connected to the network for receiving messages in a second format different from the first format and for digitizing second format messages and storing the digitized second format messages in the storage along with state information indicating whether the second format messages have been read and identification information uniquely identifying each second format message;

a synchronizer connected to the network for insuring that message information is stored in the first server storage for both first format messages stored in the first server storage and second format messages stored in the second server storage; and

a mechanism in the synchronizer which is responsive to second format message information being stored in the first server storage for accessing the second server using the message information stored in the first server to delete second format messages stored therein.

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